

# **LABOR**

## **(a)**

### **LABOR STANDARDS AND SAFETY ENFORCEMENT**

#### **Indoor Air Quality (IAQ) Standard**

#### **Adopted New Rules: N.J.A.C. 12:100-13**

Proposed: October 21, 1996 at 28 N.J.R. (4564(a)).

Adopted: February 6, 1997 by Mel Gelade, Acting Commissioner, Department of Labor.

Filed: February 6, 1997 as R. 1997 d. 109, **with substantive and technical changes** not requiring additional public notice and comment (see N.J.A.C. 1:30-4.3).

Authority: N.J.S.A. 34:16-27, 34:1-20, 34:1A-3 and 34:16-20 et seq., 29 U.S.C. Sections §§701 et seq., and 34 C.F.R. 361.1 et seq.

Effective Date: March 3, 1997

Expiration Date: August 26, 1999.

#### **Summary of Hearing Officer's Report and Agency Responses:**

A public hearing on the proposed new rules was held on November 6, 1996 at the Department of Labor, John Fitch Plaza, Trenton, New Jersey. Deirdre' L. Webster, Regulatory Officer, was available to preside at the hearing and to receive testimony. One individual appeared and gave testimony on the proposed new rules. As a result of the written and oral comments received, the hearing officer recommended that the rules be adopted with changes not in violation of N.J.A.C. 1:30-4.3. The public hearing record may be reviewed by contacting Deirdre' L. Webster, Regulatory Officer, Officer of Regulatory Services, Office of the Commissioner, Department of Labor, CN 110, Trenton, New Jersey 08625-0110. It is noted that the Public Employee Occupational Safety and Health (PEOSH) Advisory Board supports the adoption of these rules.

#### **Summary of Agency-Initiated Changes:**

Upon review of the proposed new rules as published, the Department found a typographical error in the definition of HVAC system at N.J.A.C. 12:100-13.2. The quotation marks around the word "HVAC" should include the word "system." This correction is being made on adoption.

#### **Summary of Public Comments and Agency Responses:**

Written and oral comments were received from Katherine A. Black, Staff Representative, CWA Local 1034; Thomas P. Canzanella, First Vice President, Professional Fire Fighters Association of New Jersey; M. Douglas Mueller, CIH Program Director, Environmental Resources Management, Inc.; Anthony D. Pellegrino, Manager, Bureau of Safety, New Jersey Department of Transportation; Thomas W. Peter, Industrial Hygienist, Environmental Resource; Stephen Vreeland, Chairman, New Jersey State Firemen's Mutual Benevolent Association and New Jersey State Fire Commission.

**COMMENT:** The Professional Firefighters Association of New Jersey supports enactment with the inclusion of additional specific language requiring the abatement of products of combustion, that is, motor vehicle exhaust from fire apparatus from within fire stations.

**RESPONSE:** The Department believes that the addition of this requirement would exceed the provisions previously contained in the Department of Community Affairs (DCA) IAQ rules. However, the Department encourages the commenter to make a proposal to the PEOSH Advisory Board regarding this issue for a proposed amendment to the Firefighter Standard.

**COMMENT:** This proposed standard only regulates public employees under PEOSH. Would it not make sense to apply this standard, when appropriately revised, to all public and private facilities, similar to the proposed U.S. Environmental Protection Agency (EPA) IAQ standard, thus providing similar safeguards for all workers?

**RESPONSE:** The New Jersey Public Employees Occupational Safety and Health Act, N.J.S.A. 34:6A-25 et seq., does not extend coverage to the private sector. Federal Occupational Safety and Health Act (OSHA) regulates the private sector in New Jersey.

**COMMENT:** The proposed new rules apply to “existing buildings occupied by public employees. . .” but does not include a de minimus cutoff as to the minimum number of public employees present in a facility. For example, if a large commercial facility leased primarily to private companies contains a small office occupied by public employees, does the entire facility then have to comply with the standard? And if so, then who would the “designated person” be if the facility is privately operated with only a very minimum occupancy by public employees?

**RESPONSE:** The public employer is responsible for their employees only. If a public employer leases a portion of a building, then the employer must work with the building owner regarding compliance with the provisions of the IAQ rules. It is up to each public employer to appoint a “designated person” to represent them.

**COMMENT:** Training requirements are not established for the “designated person” to assure that he or she is familiar with the intent of the rules and the issues associated with adverse indoor air quality.

**RESPONSE:** Training requirements are not mandated in the proposed IAQ rules for the “designated person.” The Department recognizes that familiarity with the IAQ rules and IAQ issues are important. As a result, the Department of Health & Senior Services (DHSS) will conduct educational seminars, provide consultation and disseminate educational materials for “designated persons” and other employer and employee representatives.

**COMMENT:** In N.J.A.C. 12:100-13.3, Compliance program, certain trigger limits are noted for CO<sub>2</sub>, (1,000 ppm) and temperature (68 to 79 degrees Fahrenheit), and that if these are not complied with then the “designated person” must “check to see if the Heating Ventilation and Air Conditioning (HVAC) system is in the proper operating order.” It is certainly possible, based on building layout, ventilation system supply and return locations, recent renovations adding or deleting partitions and demising walls, that areas could exist where the temperature or carbon dioxide trigger levels are exceeded, but the HVAC system is “in proper operating order.” This may lead to IAQ concerns with no regulatory remedy.

**RESPONSE:** There may be instances where the HVAC system is operating as it should and the CO<sub>2</sub> levels exceed 1,000 parts per million (ppm) and the temperature reading are outside the range of 68 to 79 degrees Fahrenheit. In these instances, if a complaint is received, the Department may issue recommendations, but will not issue an Order to Comply. It was not the intent of the rule to regulate the interior building layout and design.

**COMMENT:** Also, N.J.A.C. 12:100-13.3, Compliance program, indicates that general or local exhaust ventilation may be needed if housekeeping or maintenance activities use hazardous materials that may cause exposures “above the applicable Permissible Exposure Limit (PEL).” Certainly in an office environment, as opposed to a manufacturing environment, the strict adherence to the use of PELs as a trigger level for additional ventilation will not lead to “fewer complaints from employees regarding the quality of indoor air” and a “healthier workplace which will help improve employee health and productivity.” Why not? Simply because “warning signs” of the presence of a typical airborne contaminants in a typical office environment, such as odor, can elicit complaints at levels well below the PEL. Perhaps the triggers should be based on more subjective concerns such as adverse odor or irritation. As an example, many reduced sulfur compounds have odor thresholds in the parts per billion range as opposed to their PELs in the parts per million range.

**RESPONSE:** The Department maintains the enforcement of the PELs to protect public employees exposed to toxic and hazardous substances in the workplace. If employee complaints are triggered by lower odor thresholds, then action, when appropriate, can be taken by the employer or by the Department once a complaint is filed.

**COMMENT:** In the Summary, it is indicated that the standard will apply to buildings occupied by public employees “during their regular working hours.” Such a statement is unacceptable in a business environment where building maintenance may designate regular working hours of 7:00 A.M. to 5:30 P.M., but building occupants may be expected to work varied work hours. This is especially true in a multi-use facility where numerous tenants, some public and some private, have their own work regimen.

**RESPONSE:** The rules apply to public employees during the regular working hours. The public employer must ensure compliance with provisions of the IAQ rules during regular working hours of all public employees in the building.

Each public employer is responsible to determine what the regular work hours are for their employees even in a situation where an employee may set his or her own hours. Since regular working hours are alterable, the employer must work with the building owner to ensure compliance with provisions of the IAQ rule for their employees.

**COMMENT:** Define HVAC system commissioning report referenced in N.J.A.C. 12:100-13.8(a)2.

**RESPONSE:** An HVAC system commissioning report is a document normally prepared by an architect or engineer that provides verification that the HVAC system is operating in conformity with the design intent. To clarify N.J.A.C. 12:100-13.8(a), the Department is adding this definition to N.J.A.C. 12:100-13.2 upon adoption. The American Society of Heating, Refrigeration, and Air Conditioning Engineering, Inc. (ASHRAE) Guidelines 1-1989 has more information on this subject.

**COMMENT:** Be more specific and define office buildings, referenced in N.J.A.C. 12:100-13.3(a)4, for example, an office within a repair shop should be excluded from the temperature compliance program. Radiant heaters may be used to make a person “feel” warmer while the air itself is not heated. A dry bulb temperature reading of the air would give a false indication of the employee comfort level.

**RESPONSE:** The Department interprets an office building as being a building in which administrative and/or clerical activities are conducted. Examples of some facilities and/or operations it does not consider as an office building include schools, repair shops, garages, and print shops. To clarify N.J.A.C. 12:100-13.3(a)4, the definition of “office building” has been added to N.J.A.C. 12:100-13.2 upon adoption.

**COMMENT:** Clarify and reword the type of inspection under N.J.A.C. 12:100-13.3(a)1. “Additionally, any reservoirs or parts of this system. . .shall be checked visually for microbial growth.”

**RESPONSE:** The word “visually” was inserted at N.J.A.C. 12:100-13.3(a)1 to clarify that the check for microbial growth is a visual check and not a lab test. The Department never intended this check to be otherwise and based on the commenter’s statement recognized that this intent was not clearly understood as a rule was drafted. As a result, this clarification has been made on adoption.

**COMMENT:** All too often, indoor air quality complaints are described as “building-related illnesses.” N.J.A.C. 12:100-13.3(a)7 should be reworded as “Promptly investigating all employee complaints of signs or symptoms that are medically determined to be associated with buildings-related illnesses.”

**RESPONSE:** Building-related illnesses, as defined under N.J.A.C. 12:100-13.2, describes specific medical conditions of known etiology which can be documented by physical signs and laboratory findings. Examples of several illnesses are listed in the definition.

**COMMENTS:** As a suggestion, your program may need to go into more detail on how to control microbial growth by:

1) **Filtration:** Preventing biological contaminants and organic nutrients from entering the building by means of high filtration (use high efficiency filters inside the HVAC systems).

2) **Humidity:** Maintaining a low humidity, dry surfaces in HVAC system, and prevent flooding, roof leaks, and condensation (inspections to identify structural and engineering flaws that may contribute to the humidity).

3) **Ventilation:** Provide adequate ventilation, following ASHRAE’s Guidelines for minimum ventilation rates (filtration of recirculated air would also aid in controlling microbial growth).

4) **Housekeeping:** Good housekeeping to minimize soil and organic matter, using high efficiency filter bags in vacuum cleaners, minimize the use of carpets in high soil/moisture areas.

**RESPONSE:** The Department agrees with the comments and notes that the commenter’s recommendations are already addressed in the rules as follows:

**Filtration** – Some filters in HVAC systems are not efficient enough to remove small (one to two microns) fungal and bacterial spores. In order to remove fungal and bacterial spores, filters should have a 50 to 70 percent efficiency rating. The Department is not mandating the use of filters with the higher efficiency rating due to increased cost to employers but will encourage their use when appropriate and economically feasible.

**Humidity** – N.J.A.C. 12:100-13.4(c) has provisions that require the employer to promptly repair water leaks that can promote growth of biological agents or that the employer control microbial contamination by promptly drying, replacing, removing or cleaning damp or wet materials. In addition, the employer must take measures to remove visible microbial contamination in ductwork, humidifiers, other HVAC and building systems as well as other surfaces in the building.

**Ventilation** – Adequate fresh air is needed to dilute human-source bioaerosols. The proposed standard does not require retrofitting of existing ventilation systems but rather ensures that the employer check to make sure that the existing HVAC system is operating as it should when the carbon dioxide levels exceed 1,000 ppm (see N.J.A.C. 12:100-13.3(a)3).

**Housekeeping** – The Department enforces house-keeping provisions under the Sanitation Standard (29 C.F.R. 1910.141).

**COMMENT:** The key to the promulgation of any of the indoor air quality rules, that is, New Jersey's and OSHA's, is acceptance by the building owners and managers. They feel that these programs will burden them financially. Your program through the proper education (presentations by PEOSH) would help them understand the cost-benefit relationship of managing indoor air quality. In your proposed rules, you should mention that there will be assistance by PEOSH to get them started, PEOSH's program should be publicized as a friend to the building owners and managers.

**RESPONSE:** The Department agrees that education is a key component to the acceptance of the IAQ rules. The DHSS is currently preparing an IAQ packet which will summarize the IAQ rules and provide detailed information and checklists to assist employers and employees in maintaining acceptable indoor air quality in the workplace. In addition, the DHSS provides consultative services and educational seminars regarding IAQ on a routine basis for employer and employee groups.

**COMMENT:** We recommend that in N.J.A.C. 12:100-13.7(b), the final sentence should read: "the employer shall implement other control measures such as local source capture exhaust ventilation." Remove substitution from the end.

**RESPONSE:** When possible, substitution of less hazardous process or chemicals is an acceptable method to reduce potential health effects among employees. In some instances, substitution may negate the need to provide local exhaust ventilation.

**COMMENT:** Several commenters voiced support for the proposed IAQ rules.

**RESPONSE:** The Department appreciates the notes of support.

## **FEDERAL STANDARDS STATEMENT**

There are no Federal standards or requirements concerning indoor air quality. As a result, these rules do not exceed standards or requirements imposed by Federal law. A Federal exceedance analysis is, therefore, not required.

**Full text** of the adoption follows (additions to proposal indicated in boldface with asterisks **\*thus\***; deletions from proposal indicated in brackets with asterisks **\*[thus]\***):

### ***SUBCHAPTER 13. INDOOR AIR QUALITY STANDARD***

#### ***12:100-13.1 Scope***

This subchapter shall apply to matters relating to indoor air quality in existing buildings occupied by public employees during their regular work hours.

#### ***12:100-13.2 Definitions***

The following words and terms, when used in this subchapter, have the following meaning unless the context clearly indicates otherwise.

"Air contaminants" refers to substances contained in the vapors from paint, cleaning chemicals, pesticides, solvents, particulates, outdoor air pollutants and other airborne substances which together may cause material impairment to employees working within the enclosed workplace.

“Building-related illness” describes specific medical conditions of known etiology which can be documented by physical signs and laboratory findings. Such illnesses include sensory irritation when caused by known agents, respiratory allergies, asthma, nosocomial infections, humidifier fever, Legionnaires’ disease, and the signs and symptoms characteristic of exposure to chemical or biologic substances such as carbon monoxide, formaldehyde, pesticides, endotoxins, or mycotoxins.

“Building systems” includes the heating, ventilation and air-conditioning (HVAC) system, the energy management system and all other systems in a facility which may impact indoor air quality.

“Designated person” means a person who has been given the responsibility by the employer to take necessary measures to assure compliance with this subchapter.

“Department” means the Department of Health and Senior Services.

“Designated smoking area” means an area in a building, where smoking is permitted and which is physically separated from non-smoking areas and which non-smokers are not required to enter or pass through.

“Employee” means the term as defined at N.J.A.C. 12:100-2.1.

“Employer” means the term as defined at N.J.A.C. 12:100-2.1.

\*[“HVAC”]\* **\*“HVAC system”\*** means the collective components of the heating, ventilation and air-conditioning system including, but not limited to, filters and frames, cooling coil condensate drip pans and drainage piping, outside air dampers and actuators, humidifiers, air distribution ductwork, automatic temperature controls, and cooling towers.

**\*“HAVC System Commissioning Report” means a document normally prepared by an architect or engineer that provides verification that the HVAC system is operating in conformity with the design intent.\***

**\*“Office building” means a building in which administrative and/or clerical activities are conducted. Examples of facilities and/or operations which are not office buildings include schools, repair shops, garages and print shops.\***

“Renovation and remodeling” means building modification involving activities that include but are not limited to: removal or replacement of walls, roofing, ceilings, floors, carpet, and components such as moldings, cabinets, doors, and windows; painting; decorating; demolition; surface refinishing; and removal or cleaning of ventilation ducts.

### *12:100-13.3 Compliance program*

(a) The employer shall identify a designated person who is given the responsibility to assure compliance with this section. The designated person shall assure that at least the following actions are implemented and documented:

1. Establishing and following a preventive maintenance schedule in accordance with the manufacturer’s recommendations or with accepted practice for the HVAC system. Scheduled maintenance of the HVAC system shall include checking and/or changing air filters, checking and/or changing belts, lubrication of equipment parts, checking the functioning of motors and confirming that all \*[equipment]\* **\*equipment\*** is in operating order. Damaged or inoperable components shall be replaced or repaired as appropriate. Additionally, any reservoirs or parts of this system with standing water shall be checked **\*visually\*** for microbial growth;

2. Implementing the use of general or local exhaust ventilation where housekeeping and maintenance activities involve use of equipment or products that could reasonably be expected to result in hazardous chemical or particulate exposures, above the applicable Permissible Exposure Limit (PEL), as adopted by reference under N.J.A.C. 12:100-4.2, to employees working in other areas of the building or facility;

3. When the carbon dioxide level exceeds 1,000 parts per million (ppm), the employer shall check to make sure the HVAC system is operating as it should. If it is not, the employer shall take necessary steps as outlined in (a)1 above;

4. When temperatures in office buildings are outside of the range of 68 to 79 degrees Fahrenheit, the employer shall check to make sure the HVAC system is in proper operating order. If it is not, the employer shall take necessary steps as outlined in (a)1 above;

5. If contamination of the make-up air supply is identified and documented, then the make-up inlets and/or exhaust air outlets shall be relocated or the source of the contamination eliminated. Sources of make-up air contamination may include contaminants from sources such as cooling towers, sanitary vents, vehicular exhaust from parking garages, loading docks, and street traffic;

6. Assuring that buildings without mechanical ventilation are maintained so that windows, doors, vents, stacks and other portals designed or used for natural ventilation are in operable condition; and

7. Promptly investigating all employee complaints of signs or symptoms that may be associated with building-related illness.

#### *12:100-13.4 Controls of specific contaminant sources*

(a) In workplace where the employer has established designated smoking areas, the following shall apply:

1. Smoking shall be permitted only in such areas;
2. The employer shall assure that designated smoking areas are enclosed, exhausted directly to the outside, and are maintained under negative pressure (with respect to surrounding spaces) sufficient to contain tobacco smoke within the designated area;
3. The employer shall assure that cleaning and maintenance work in designated smoking areas is conducted only when no smoking is taking place;
4. The employer shall assure that employees are not required to enter designated smoking areas in the performance of normal work activities;
5. The employer shall post signs clearly indicating areas that are designated smoking areas;
6. The employer shall post signs that will clearly inform anyone entering the workplace that smoking is restricted to designated areas; and
7. The employer shall prohibit smoking within designated smoking areas during any period that the exhaust ventilation system servicing that area is not properly operating.

(b) Regarding other indoor air contaminants, when general ventilation is inadequate to control air contaminants emitted from point sources within work spaces to below the applicable PEL, as adopted by reference under N.J.A.C. 12:100-4.2, the employer shall implement other control measures such as local source capture exhaust ventilation or substitution,

(c) The employer shall control microbial contamination in the building by promptly repairing water leaks that can promote growth of biologic agents, or shall control microbial contamination in the building by promptly drying, replacing, removing, or cleaning damp or wet materials. The employer shall take measures to remove visible microbial contamination in ductwork, humidifiers, other HVAC and building system components, or on building surfaces, such as carpeting and ceiling tiles, when found during regular or emergency maintenance activities or during visual inspection.

#### *12:100-13.5 Air quality during renovation and remodeling*

(a) Renovation work and/or new construction that results in the diffusion of dust, stone and other small particles, toxic gases or other harmful substances in quantities hazardous to health shall be safeguarded by means of local ventilation or other protective devices to ensure the safety of employees. Renovation areas in occupied buildings shall be isolated and dust and debris shall be confined to the renovation or construction area.

(b) Before use of paints, adhesives, sealants, solvents, or installation of insulation, particle board, plywood, floor coverings, carpet backing, textiles, or other materials in the course of renovation or construction, the employer shall check product labels or seek and obtain information from the manufacturers of those products on whether or not they contain volatile organic compounds such as solvents, formaldehyde or isocyanates that could be emitted during regular use. This information shall be used to select products and to determine necessary measures to be taken to comply with this section.

(c) The employer shall notify employees at least 24 hours in advance, or promptly in emergency situation, of work to be performed on the building that may introduce air contaminants into their work area.

#### *12:100-13.6 Recordkeeping*

(a) The maintenance schedule shall be updated to show all maintenance performed on the building systems. The schedule shall include the date that such maintenance was performed and the name of the person or company performing the work.

(b) The records required to be maintained by this section shall be retained for at least three years and be available on request to employees and employee representatives and Department representatives for examination and copying.

#### *12:100-13.7 Employer's response to a signed complaint*

(a) Within 15 working days of receipt of the complaint notification from the Department, the employer shall respond in writing to the Department. The response may include any combination of the following:

1. A statement that the complaint is unfounded;
  2. A description of any remedial action already taken;
  3. An outline of any remedial measures planned but not yet taken with timetable for completion;
- and/or
4. A statement that a study of the problem, with a timetable for completion of the study, has been initiated.

(b) Where remedial measures are planned or a study initiated, they shall be completed as soon as feasible. The employer shall submit, to the Department, a written report describing the remedial measures implemented and/or a copy of a study's report within 15 working days of completion.

(c) Permits for remedial work shall be obtained as required by N.J.A.C. 5:23 (the New Jersey Uniform Construction Code). All work requiring a permit shall be performed in compliance with N.J.A.C. 5:23.

#### *12:100-13.8 Indoor air quality (IAQ) compliance documents*

(a) In response to an employee complaint to the Department, the employer shall provide any of the following documents, if available, and requested by the Department:

1. As-built construction documents;
2. HVAC system commissioning reports;
3. HVAC systems testing, adjusting and balancing reports;
4. Operations and maintenance manuals;
5. Water treatment logs; and
6. Operator training materials.